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In The United States Patent and Trademark Office  
On Appeal From The Examiner To The Board  
of Patent Appeals and Interferences

In re Application of: Jeffrey H. Starr et al.

Serial No.: 09/397,423

Filing Date: September 17, 1999

Examiner: D. Linzey

Group Art Unit: 2165

Title: *System and Method for Displaying Planning Information Associated With a Supply Chain*

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**BOX AF**

Honorable Assistant Commissioner  
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Dear Sir:

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I hereby certify that this communication is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" under 37 C.F.R. § 1.10 on the date indicated below and is addressed to The Assistant Commissioner for Patents, Washington, D.C. 20231.

Willie Jiles

Willie Jiles

Date: April 2, 2003

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**Appeal Brief**

Appellants have appealed to the Board of Patent Appeals and Interferences from the decision of the Examiner mailed October 2, 2002, finally rejecting Claims 1-14 and 16-47. Appellants filed a Notice of Appeal on December 31, 2002. Appellants respectfully submit this Appeal Brief, in triplicate, with the statutory fee of \$320.00.

**Real Party In Interest**

This application is currently owned by i2 Technologies US, Inc., as indicated by:  
an assignment recorded on September 17, 1999, in the Assignment Records of the United States Patent and Trademark Office at Reel 010349, Frames 0309-0313; and  
an assignment recorded on July 30, 2001, in the Assignment Records of the United States Patent and Trademark Office at Reel 012037, Frames 0235-0246.

**Related Appeals and Interferences**

There are no known appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision regarding this appeal.

**Status of Claims**

Claims 1-14 and 16-47 are pending in this application, stand rejected pursuant to a final Office Action mailed October 2, 2002, and are all presented for appeal. All pending claims are shown in Appendix A.

**Status of Amendments**

All amendments submitted by Appellants were entered by the Examiner before the issuance of the final Office Action mailed October 2, 2002.

**Summary of Invention**

In particular embodiments of the present invention, a memory contains an enterprise model, a planning engine, and a presentation interface. (Page 5, Lines 10-11). The enterprise model can represent a supply chain in terms its products and their component parts. (Page 5, Lines 21-22). For profit optimization planning, the enterprise model can, for each product in a supply chain, generate cash inflows and cash outflows that represent revenues and expenses associated with the products. (Page 5, Lines 27-29). Expenses can be calculated by representing costs according to the times at which the costs occur. (Page 5, Lines 29-30). Using the enterprise model, the planning engine can generate planning information relating to the supply chain. (Page 6, Lines 8-9). The planning information can relate to long-term, short-term, or other planning horizon and can include various level of detail. (Page 6, Lines 9-10).

The presentation interface can generate a visual display of selected planning information. (Page 7, Lines 24-25). In particular embodiments, a cashflow report is used to provide a net present value of the cashflows associated with each product in the supply chain. (Page 8, Lines 4-5). In the cashflow report, a product panel can be used list various products produced during a specified time frame, organized by product group or in another manner. (Page 8, Lines 5-7). In particular embodiments, a profit margin report is used to indicate, for each product related to a selected resource, a profit margin per time interval use of the selected resource. (Page 8, Lines 28-30). In particular embodiments, a resource allocation report is used to indicate, for each product associated with a selected resource, a forecasted demand and a number of units allocated for production. (Page 9, Lines 20-22). In particular embodiments, a three-dimensional plant distribution report is used to indicate planning information related to specific plant locations. (Page 13, Lines 15-16). The plant distribution report can include a bottom panel, a left panel, and a right panel. (Page 13, Lines 16-17). The bottom panel can display different plant locations along a first axis and margins per hour along a second axis. (Page 13, Lines 17-19). Icons in the bottom panel can represent products or resources in a supply chain and can each be associated with a particular plant location along the first axis and a particular profit margin per hour along the second axis. (Page 13, Lines 19-21).

**Statement of Issues**

1. Does U.S. Patent No. 5,953,707 to Huang et al. (“*Huang*”) anticipate Claims 1-2, 4, 6-10, 12-14, 16-18, 20-26, 28, 30-34, 36-41, and 43-47 under 35 U.S.C. § 102(e)?
2. Does *Huang*, in combination with U.S. Patent No. 5,596,502 to Koski et al. (“*Koski*”), render Claims 3 and 27 obvious under 35 U.S.C. § 103(a)?
3. Does *Huang*, in combination with U.S. Patent No. 5,832,532 to Kennedy et al. (“*Kennedy*”), render Claims 5, 11, 19, 29, 35, and 42 obvious under 35 U.S.C. § 103(a)?

**Grouping of Claims**

Appellants have made an effort to group claims to reduce the burden on the Board. In the argument section of this brief, where appropriate, Appellants present arguments why particular

claims subject to a ground of rejection are separately patentable from other claims subject to the same ground of rejection.

Appellants have concluded that the claims can be grouped together as follows:

1. Group 1 can include Claims 1, 6-7, 25, and 30-31;
2. Group 2 can include Claims 2 and 26;
3. Group 3 can include Claims 4 and 28;
4. Group 4 can include Claims 8, 10, 12-13, 32, 34, and 36-37;
5. Group 5 can include Claims 9 and 33;
6. Group 6 can include Claims 14, 16-18, 20-21, 38-41, and 43-44;
7. Group 7 can include Claims 22-24 and 45-47;
8. Group 8 can include Claims 3 and 27;
9. Group 9 can include Claims 5 and 29;
10. Group 10 can include Claims 11 and 35; and
11. Group 11 can include Claims 19 and 42.

**Argument**

The rejection of Claims 1-2, 4, 6-10, 12-14, 16-18, 20-26, 28, 30-34, 36-41, and 43-47 under 35 U.S.C. § 102(e) as being anticipated by *Huang* is improper and should be withdrawn. The rejection of Claims 3 and 27 under 35 U.S.C. § 103(a) as being unpatentable over *Huang* in view of *Koski* is also improper and should be withdrawn. The rejection of Claims 5, 11, 19, 29, 35, and 42 under 35 U.S.C. § 103(a) as being unpatentable over *Huang* in view of *Kennedy* is also improper and should be withdrawn.

**I. Claims 1-2, 4, 6-10, 12-14, 16-18, 20-26, 28, 30-34, 36-41,  
and 43-47 are Allowable Over *Huang***

**A. Overview**

Claims 1-2, 4, 6-10, 12-14, 16-18, 20-26, 28, 30-34, 36-41, and 43-47 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Huang*. A copy of *Huang* is provided in Appendix B. Appellants respectfully submit that *Huang* does not disclose, teach, or suggest limitations recited in these claims.

**B. Standard**

A prior art reference anticipates a claim “only if *each and every element* as set forth in the claim is found, either expressly or inherently described,” in that reference. *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987) (emphasis added); *see also* M.P.E.P. § 2131 (quoting *Verdegaal Bros.*, 814 F.2d at 631); *see also* M.P.E.P. § 706.02 (“[F]or anticipation under 35 U.S.C. § 102, the reference must teach *every aspect* of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present.”). In addition, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989); *see also* M.P.E.P. § 2131 (quoting *Richardson*, 868 F.2d at 1236).

**C. Huang**

*Huang* discloses a Decision Support System (DSS) that relies on quantitative models and data analysis routines to provide decision support. (Column 4, Lines 47-49). In *Huang*, a frame-specific, customizable Graphical User Interface (GUI) is provided to support the interaction between users and the DSS in a decision process. (Column 98, Lines 19-23). *Huang* also discloses computing and displaying sales history on a per product/product group or customer/customer group basis or on different levels of aggregation (i.e. this year vs. last year, actual sales vs. budget, and year-to-date vs. balance of year). (Column 20, Lines 15-17 and 21-24).

A Demand Management Frame (DMF) supporting a demand management decision process is further disclosed in *Huang*. (Column 18, Lines 7-8). According to *Huang*, demand management is the process in which the user determines future requirements based on past requirement history and general information related to the supply chain, the DMF supporting the analysis of past demand, market trends, and development of future forecasts. (Column 19, Lines 20-25). Statistical forecasts may be generated and displayed (tables and graphs) at different levels of aggregation, such as customer group, individual customers for all products, and individual products for each product. (Column 21, Lines 2-5).

*Huang* further discloses a Finished Goods Network Design (FGDND) Module that works with a Market Data Analysis (MDA) Module and a Sales Forecasting & Planning (SPF) Module to develop a forecast of aggregate long-term demand which is then used to evaluate potential Distribution Center (DC) locations. (Column 38, Lines 5-9). In *Huang*, an optimization of overall network configuration is then produced, which assigns demand nodes and production nodes to DCs. (Column 38, Lines 13-16).

**D. Group 1 (Claims 1, 6-7, 25, and 30-31)**

Claims 1, 6-7, 25, and 30-31 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Huang*. Appellants respectfully submit that Claims 1, 6-7, 25, and 30-31 are allowable over *Huang*.

Claims 1, 6-7, 25, and 30-31 are separately patentable from every other claim subject to the same ground of rejection. Claims 1, 6-7, 25, and 30-31 recite limitations that are substantially different from limitations recited in other claims. In addition, claims excluded from Group 1 that are subject to the same ground of rejection and that depend on independent Claims 1 and 25, respectively, recite patentable distinctions over the prior art beyond those recited in independent Claims 1 and 25 and cannot be properly grouped with independent Claims 1 and 25 for purposes of this appeal.

Independent Claim 1 of the present application recites:

A system operable on at least one computer for displaying planning information associated with a supply chain, comprising:

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues and expenses occur.

Independent Claim 25 recites substantially similar limitations.

At a minimum, *Huang* does not disclose, teach, or suggest “a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues and expenses occur,” as specifically recited in independent Claim 1.

The Examiner acknowledges that all limitations recited in Applicants’ independent Claim 1 are not disclosed in *Huang*. Therefore, the Examiner’s 35 U.S.C. § 102(e) rejection is improper. For example, the Examiner states that “the calculation of a product’s net present value is a calculation commonly used in supply chain management systems when performing corporate valuations” and that “[t]herefore, it is *very likely* a function or routine to calculate a product’s net present value *would be* contained within the library of routines taught by *Huang*.” (October 2, 2002 Office Action, Page 2) (emphasis added). This is insufficient for anticipation under 35 U.S.C. § 102(e). For anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or inherently. Thus, even assuming for the sake of argument that it would be “*very likely*” that *Huang* would teach a function or routine to calculate a product’s net present value (with which Applicants do not necessarily agree), *Huang* still would not properly anticipate the invention recited in Applicants’ independent Claim 1.

Additionally, Applicants respectfully submit that the Examiner has not shown the required motivation in *Huang* or in the knowledge generally available to one of ordinary skill in the art at the time of the invention to modify *Huang* in the manner the Examiner proposes. Although Applicants do not necessarily agree that the proposed modifications to the system disclosed in *Huang* are even possible, the mere fact that a reference *can* be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the modification. *See M.P.E.P. § 2143.01.* Nothing in *Huang*, any other cited reference, or the knowledge generally available to one of ordinary skill in the art at the time of the invention suggests or provides motivation for the proposed modifications to *Huang*, nor has the Examiner provided evidence that suggests or provides motivation for the various proposed modifications to *Huang*.<sup>1</sup>

As the Examiner indicates, *Huang* merely discloses a system of integrating product, sales, and inventory information into a *feasible replenishment plan*. (October 2, 2002 Office Action, Page 2) (emphasis added). The Examiner continues:

In order for the system to integrate all these factors into a single supply chain management plan, the planning subsystem (planning engine) must access and communicate with the overall enterprise model to create a *feasible plan*.

... *Huang* teaches a “library of *models and routines* that are logically linked, regularly updated and maintained. To support the PSI planning process for example, one can then *employ an appropriate subset of models and routines from the library to represent the underlying supply chain abstraction and provide decision support*. The present invention assembles the models and routines in a flexible manner, as needed by a decision making environment, to enable the DSS 10 to provide customized decision support with a readily upgradable and scalable library.

(October 2, 2002 Office Action, Page 2) (citations omitted) (emphasis added). The Examiner then states that the calculation of a product’s net present value is a calculation commonly used in supply chain management systems when performing corporate valuations and that, therefore,

<sup>1</sup> If the Examiner is relying on “common knowledge” or “well known” art to modify the reference, or if Official Notice is being taken, Applicants have requested that the Examiner provide a reference in support of this position pursuant to M.P.E.P. § 2144.03. If the Examiner is relying on personal knowledge to supply the required motivation or suggestion to combine, Applicants have requested that the Examiner provide an affidavit supporting such facts pursuant to M.P.E.P. § 2144.03.

it is very likely a function or routine to calculate a product's net present value would be contained within the library of routines taught by *Huang*. (October 2, 2002 Office Action, Page 2) (emphasis added). Applicants respectfully disagree.

The models and routines disclosed in *Huang* merely represent the underlying supply chain abstraction and provide decision support for the feasible replenishment plan disclosed in *Huang*. Independent Claim 1 does not even mention a feasible replenishment plan, which is the subject of *Huang*. Furthermore, nowhere does *Huang* even allude to "net present value," much less "a cashflow report" providing net present value information, as recited in independent Claim 1. Whether or not calculating a product's net present value is commonly done in supply chain management systems when performing corporate valuations, as the Examiner states, *Huang* still fails to disclose, teach, or suggest a "first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues and expenses occur," as recited in independent Claim 1. In fact, contrary to the Examiner's statement that "it is very likely a function or routine to calculate a product's net present value would be contained within the library of routines taught by *Huang*," Applicants submit that it is highly unlikely that such a function or routine would be used in the system of *Huang* since there is no apparent reason to calculate a product's net present value in the context of providing decision support for a feasible replenishment plan.

For at least these reasons, *Huang* fails to disclose, teach, or suggest all elements of independent Claims 1 and 25. Independent Claims 1 and 25, together with dependent Claims 6-7 and 30-31, are therefore allowable over *Huang*.

**E. Group 2 (Claims 2 and 26)**

Dependent Claims 2 and 26 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Huang*. Appellants respectfully submit that Claims 2 and 26 are allowable over *Huang*.

Claims 2 and 26 are separately patentable from every other claim subject to the same ground of rejection. Claims 2 and 26 recite limitations that are substantially different from

limitations recited in other dependent claims. In addition, Claims 2 and 26, which depend on independent Claims 1 and 25, respectively, recite patentable distinctions over the prior art beyond those recited in independent Claims 1 and 25 and cannot be properly grouped with independent Claims 1 and 25 for purposes of this appeal.

Claim 2 recites that the cashflow report of independent Claim 1 includes a two-dimensional display comprising “a first panel presenting a list of the products,” “a second panel presenting the net present value for each listed product,” and “a third panel presenting a plurality of columns, each column corresponding to a specified time period and providing a net cashflow associated with each listed product during that time period.” Claim 26 recites substantially similar limitations.

*Huang* merely discloses a table containing rows of products or product groups and columns containing the sales data for those products or product groups aggregated at the appropriate levels. (Figure 56; Column 106, Lines 36-40). At a minimum, *Huang* fails to disclose, teach, or suggest “a second panel presenting the net present value for each listed product” or “a third panel presenting a plurality of columns, each column corresponding to a specified time period and providing a net cashflow associated with each listed product during that time period,” as recited in Claim 2.

For at least these reasons, *Huang* fails to disclose, teach, or suggest all elements of Claims 2 and 26. Claims 2 and 26 are therefore allowable over *Huang*.

**F. Group 3 (Claims 4 and 28)**

Dependent Claims 4 and 28 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Huang*. Appellants respectfully submit that Claims 4 and 28 are allowable over *Huang*.

Claims 4 and 28 are separately patentable from every other claim subject to the same ground of rejection. Claims 4 and 28 recite limitations that are substantially different from limitations recited in other dependent claims. In addition, Claims 4 and 28, which depend on independent Claims 1 and 25, respectively, recite patentable distinctions over the prior art beyond

those recited in independent Claims 1 and 25 and cannot be properly grouped with independent Claims 1 and 25 for purposes of this appeal.

Claim 4 recites that the presentation interface of independent Claim 1 is further operable to generate a second visual display comprising a product report, the product report comprising “a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;” “a second bar graph indicating a profit margin per unit for each of the products;” and “a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.” Claim 28 recites substantially similar limitations.

*Huang* merely discloses graphically representing production, sales, and inventory information according to selected time periods and a production plan displaying the results of capacity checking for production resources. (Figure 43; Column 108, Lines 60-63). At a minimum, *Huang* fails to disclose, teach, or suggest “a profit margin per unit,” much less a product report comprising “a second bar graph indicating a profit margin per unit for each of the products,” as recited in Claim 4. .

For at least these reasons, *Huang* fails to disclose, teach, or suggest all elements of Claims 4 and 28. Claims 4 and 28 are therefore allowable over *Huang*.

**G. Group 4 (Claims 8, 10, 12-13, 32, 34, and 36-37)**

Claims 8, 10, 12-13, 32, 34, and 36-37 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Huang*. Appellants respectfully submit that Claims 8, 10, 12-13, 32, 34, and 36-37 are allowable over *Huang*.

Claims 8, 10, 12-13, 32, 34, and 36-37 are separately patentable from every other claim subject to the same ground of rejection. Claims 8, 10, 12-13, 32, 34, and 36-37 recite limitations that are substantially different from limitations recited in other claims. In addition, claims excluded from Group 4 that are subject to the same ground of rejection and that depend on independent Claims 8 and 32, respectively, recite patentable distinctions over the prior art beyond

those recited in independent Claims 8 and 32 and cannot be properly grouped with independent Claims 8 and 32 for purposes of this appeal.

In addition to reciting certain limitations similar to those recited in independent Claim 1, independent Claim 8 of the present application recites certain other limitations. Independent Claim 32 recites limitations substantially similar to those recited in independent Claim 8. At a minimum, *Huang* fails to disclose, teach, or suggest “a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use,” as specifically recited in independent Claim 8.

The Examiner indicates that *Huang* teaches:

. . . the analysis and synthesis of data to compute/display (tables and graphs), characterize and analyze sales history per product/ product group or customer/customer group (see the MDA Module specification discussion for details of models and formulas): Volatility of demand, Lumpiness of demand, Trends in demand history, Demand pattern changes, and Seasonality. Compute, display (tables and graphs) and analyze sales history statistics for different levels of aggregation: This year vs. last year, Actual sales vs. budget, and Year to date vs. balance of Year.

(October 2, 2002 Office Action, Page 3). The Examiner further states that “[p]ast and future sales data is used extensively in corporate planning.” (October 2, 2002 Office Action, Page 3). Applicants respectfully reiterate the requirements of anticipation under 35 U.S.C. § 102(e) discussed above. Whether or not “[p]ast and future sales data is used extensively in corporate planning,” as the Examiner states, nowhere does *Huang* even allude to “profit margin,” much less “a profit margin report,” as recited in independent Claim 8. *Huang* certainly does not disclose, teach, or suggest “a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use,” as recited in independent Claim 8.

Additionally, Applicants respectfully submit that the Examiner has not shown the required motivation in *Huang* or in the knowledge generally available to one of ordinary skill in the art at the time of the invention to modify *Huang* in the manner the Examiner proposes. Although Applicants do not necessarily agree that the proposed modifications to the system disclosed in *Huang* are even possible, the mere fact that a reference *can* be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the modification. *See M.P.E.P. § 2143.01.* Nothing in *Huang*, any other cited reference, or the knowledge generally available to one of ordinary skill in the art at the time of the invention suggests or provides motivation for the proposed modifications to *Huang*, nor has the Examiner provided evidence that suggests or provides motivation for the various proposed modifications to *Huang*.<sup>2</sup>

For at least these reasons, *Huang* fails to disclose, teach, or suggest all elements of independent Claims 8 and 32, whether *Huang* is considered alone or in combination with any other cited reference or with knowledge of one skilled in the art at the time of the invention. Independent Claims 8 and 32, together with dependent Claims 10, 12-13, 34, and 36-37, are therefore allowable over *Huang*.

***H. Group 5 (Claims 9 and 33)***

Dependent Claims 9 and 33 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Huang*. Appellants respectfully submit that Claims 9 and 33 are allowable over *Huang*.

Claims 9 and 33 are separately patentable from every other claim subject to the same ground of rejection. Claims 9 and 33 recite limitations that are substantially different from limitations recited in other dependent claims. In addition, Claims 9 and 33 which depend on independent Claims 8 and 32, respectively, recite patentable distinctions over the prior art beyond

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<sup>2</sup> If the Examiner is relying on “common knowledge” or “well known” art to modify the reference, or if Official Notice is being taken, Applicants have requested that the Examiner provide a reference in support of this position pursuant to M.P.E.P. § 2144.03. If the Examiner is relying on personal knowledge to supply the required motivation or suggestion to combine, Applicants have requested that the Examiner provide an affidavit supporting such facts pursuant to M.P.E.P. § 2144.03.

those recited in independent Claims 8 and 32 and cannot be properly grouped with independent Claims 8 and 32 for purposes of this appeal.

Claim 9 recites that the profit margin report of independent Claim 8 includes a graph comprising “a first axis scaled in terms of profit margins per unit;” “a second axis scaled in terms of numbers of units produced for each time interval the specified resource is in use;” and “a plurality of nodes representing the products associated with the specified resource, each node located at a position in the graph corresponding to the values for the product on the first and second axes.” Claim 33 recites substantially similar limitations.

As discussed above, *Huang* merely discloses computing and displaying sales history on a per product/product group or customer/customer group basis or on different levels of aggregation (i.e. this year vs. last year, actual sales v. budget, and year-to-date vs. balance of year). (Column 20, Lines 15-17 and 21-24). Nowhere does *Huang* even so much as allude to “profit margins per unit,” much less a graph comprising in part “a first axis scaled in terms of profit margins per unit,” as recited in Claim 9. Furthermore, nowhere does *Huang* disclose, teach, or suggest a graph comprising in part “a plurality of nodes representing the products associated with the specified resource, each node located at a position in the graph corresponding to the values for the product on the first and second axes,” as recited in Claim 9.

For at least these reasons, *Huang* fails to disclose, teach, or suggest all elements of Claims 9 and 33. Claims 9 and 33 are therefore allowable over *Huang*.

**I. Group 6 (Claims 14, 16-18, 20-21, 38-41, and 43-44)**

Claims 14, 16-18, 20-21, 38-41, and 43-44 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Huang*. Appellants respectfully submit that Claims 14, 16-18, 20-21, 38-41, and 43-44 are allowable over *Huang*.

Claims 14, 16-18, 20-21, 38-41, and 43-44 are separately patentable from every other claim subject to the same ground of rejection. Claims 14, 16-18, 20-21, 38-41, and 43-44 recite limitations that are substantially different from limitations recited in other claims. In addition,

claims excluded from Group 6 that are subject to the same ground of rejection and that depend on independent Claims 14 and 38, respectively, recite patentable distinctions over the prior art beyond those recited in independent Claims 14 and 38 and cannot be properly grouped with independent Claims 14 and 38 for purposes of this appeal.

In addition to reciting certain limitations similar to those recited in independent Claim 1, independent Claim 14 of the present application recites:

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a report that indicates, for one or more products in the supply chain, a forecasted demand and a number of units allocated for production;

the report including a bar graph comprising:

a first axis scaled in terms of numbers of units;  
a bar, associated with a product in the supply chain, extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand; and

a marker on the bar corresponding to a second position on the first axis, the second position indicating a number of units of the product allocated for production.

Independent Claim 38 recites substantially similar limitations.

*Huang* does not disclose, teach, or suggest the combination of limitations specifically recited in Applicants' independent Claim 14, whether *Huang* is considered alone or in combination with any other cited reference or with knowledge of one skilled in the art at the time of invention.

The Examiner states that *Huang* teaches that "[s]everal analysis tools are available: Trend, Moving average, Pattern changes, Pareto analysis, and correlation between products. The output of these analyses can be displayed in table or in graph." (Office Action, October 2, 2002, Page 3). The Examiner also states that "supply and demand type graph described by the applicant is well known in the art of economics and is used extensively when performing market analysis." (Office Action, Page 4). Applicants respectfully disagree. *Huang*, at the very minimum, does not teach a bar graph including "a first axis scaled in terms of numbers of units," "a bar,

associated with a product in the supply chain, extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand,” and “a marker on the bar corresponding to a second position on the first axis, the second position indicating a number of units of the product allocated for production,” as specifically recited in independent Claim 14.

Furthermore, the limitations specifically recited in independent Claim 14 recite more than just “supply and demand type graph[s],” contrary to what the Examiner suggests. A prior art reference anticipates a claim only if every element recited in the claim is expressly or inherently disclosed in the reference; any feature not expressly disclosed must be inherently disclosed. Thus, even if “supply and demand type graphs are well known in the art of economics and [are] used extensively when performing market analysis,” as suggested by the Examiner (with which Applicants do not necessarily agree), *Huang* still does not anticipate Applicants’ claimed invention. The Examiner’s claim that “the supply and demand type graph . . . is well known in the art of economics” is insufficient.

Additionally, Applicants respectfully submit that the Examiner has not shown the required motivation in *Huang* or in the knowledge generally available to one of ordinary skill in the art at the time of the invention to modify *Huang* in the manner the Examiner proposes. Although Applicants do not necessarily agree that the proposed modifications to the system disclosed in *Huang* are even possible, the mere fact that a reference *can* be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the modification. See M.P.E.P. § 2143.01. Nothing in *Huang*, any other cited reference, or the knowledge generally available to one of ordinary skill in the art at the time of the invention suggests or provides motivation for the proposed modifications to *Huang*, nor has the Examiner provided evidence that suggests or provides motivation for the various proposed modifications to *Huang*.<sup>3</sup>

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<sup>3</sup> If the Examiner is relying on “common knowledge” or “well known” art to modify the reference, or if Official Notice is being taken, Applicants have requested that the Examiner provide a reference in support of this position pursuant to M.P.E.P. § 2144.03. If the Examiner is relying on personal knowledge to supply the required motivation or suggestion to combine, Applicants have requested that the Examiner provide an affidavit supporting such facts pursuant to M.P.E.P. § 2144.03.

For at least these reasons, and others stated above with reference to independent Claim 1, *Huang* fails to disclose, teach, or suggest all elements of independent Claims 14 and 38, whether *Huang* is considered alone or in combination with any other cited reference or with knowledge of one skilled in the art at the time of the invention. Independent Claims 14 and 38, together with dependent Claims 16-18, 20-21, 39-41, and 43-44, are therefore allowable over *Huang*.

**J. Group 7 (Claims 22-24 and 45-47)**

Claims 22-24 and 45-47 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Huang*. Appellants respectfully submit that Claims 22-24 and 45-47 are allowable over *Huang*.

In addition to reciting certain limitations similar to those present in independent Claim 1, independent Claim 22 of the present application recites:

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a plant distribution report that includes a bottom panel comprising:

- a first axis specifying a plurality of locations;
- a second axis specifying profit margins per hour; and
- a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource.

Independent Claim 45 recites substantially similar limitations.

*Huang* does not disclose, teach, or suggest the combination of limitations specifically recited in Applicants' independent Claim 22, whether *Huang* is considered alone or in combination with any other cited reference or with knowledge of one skilled in the art at the time of invention.

The Examiner states that *Huang* teaches "a mechanism that unifies the user dialog and display, the models and analysis routines, and data in a manner that is consistent to support the

underlying supply chain abstraction of the user.” (October 2, 2002 Office Action, Page 4). The Examiner also states,

... In summary, Huang teaches a reporting mechanism that combines the data calculated from a system’s routines into a visual display for analysis. This is the exact same concept described by the applicant where a plurality of select locations (selected locations is generated by a routine) is plotted against the profit margins per hour (a calculated routine)."

(October 2, 2002 Office Action, Page 4). Applicants respectfully disagree. *Huang*, at the very minimum, does not teach a “plant distribution report” including “a first axis specifying a plurality of locations,” “a second axis specifying profit margins per hour,” and “a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource,” as specifically recited in independent Claim 22.

Furthermore, independent Claim 22 recites more than just “a plurality of select locations (selected locations is generated by a routine) [being] plotted against the profit margins per hour (a calculated routine),” contrary to what the Examiner suggests. A prior art reference anticipates a claim only if every element recited in the claim is expressly or inherently disclosed in the reference; any feature not expressly disclosed must be inherently disclosed. Thus, even if “supply and demand type graphs are well known in the art of economics and [are] used extensively when performing market analysis,” as suggested by the Examiner (with which Applicants do not necessarily agree), *Huang* still does not anticipate Applicants’ claimed invention. The Examiner’s claim that “the supply and demand type graph . . . is well known in the art of economics” is insufficient.

Additionally, Applicants respectfully submit that the Examiner has not shown the required motivation in *Huang* or in the knowledge generally available to one of ordinary skill in the art at the time of the invention to modify *Huang* in the manner the Examiner proposes. Although Applicants do not necessarily agree that the proposed modifications to the system disclosed in *Huang* are even possible, the mere fact that a reference *can* be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the

modification. See M.P.E.P. § 2143.01. Nothing in *Huang*, any other cited reference, or the knowledge generally available to one of ordinary skill in the art at the time of the invention suggests or provides motivation for the proposed modifications to *Huang*, nor has the Examiner provided evidence that suggests or provides motivation for the various proposed modifications to *Huang*.<sup>4</sup>

For at least these reasons, and others stated above with reference to independent Claim 1, *Huang* fails to disclose, teach, or suggest all elements of independent Claims 22 and 45, whether *Huang* is considered alone or in combination with any other cited reference or with knowledge of one skilled in the art at the time of the invention. Independent Claims 22 and 45, together with dependent Claims 23-24 and 46-47, are therefore allowable over *Huang*.

## **II.      Claims 3 and 27 are Allowable Over the Proposed *Huang-Koski* Combination**

### **A.      Overview**

Claims 3 and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Huang* in view of *Koski*. A copy of *Koski* is provided in Appendix C. Appellants respectfully submit that, even assuming for the sake of argument that *Koski* could be properly combined with *Huang*, the proposed *Huang-Koski* combination does not disclose, teach, or suggest limitations recited in these claims.

### **B.      Standard**

A rejection under 35 U.S.C. § 103(a) is proper only if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter *as a whole* would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103(a) (emphasis added). As this Board has noted, “to support the

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<sup>4</sup> If the Examiner is relying on “common knowledge” or “well known” art to modify the reference, or if Official Notice is being taken, Applicants have requested that the Examiner provide a reference in support of this position pursuant to M.P.E.P. § 2144.03. If the Examiner is relying on personal knowledge to supply the required motivation or suggestion to combine, Applicants have requested that the Examiner provide an affidavit supporting such facts pursuant to M.P.E.P. § 2144.03.

conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination or the examiner must present a convincing line of reasoning . . . why the . . . claimed [combination would] have been obvious in light of the teachings of the references.” *Ex Parte Clapp*, 227 U.S.P.Q. 972, 973 (B.P.A.I. 1985).

“Virtually all inventions are combinations of old elements” that can be found in the prior art. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (quoting *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698 (Fed. Cir. 1983)). According to the Federal Circuit, the fact that all the elements of a claimed invention can be found in the prior art is alone insufficient to establish obviousness. *See In re Huston*, 308 F.3d 1267, 1280 (Fed. Cir. 2002). The M.P.E.P. similarly states that the “fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination” or modification. M.P.E.P. § 2143.01 (emphasis in original). Moreover, the fact that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed combination or modification is also insufficient to establish obviousness. *See In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988). Therefore, elements found in the prior art may not be pieced together, using a claimed invention as a blueprint, to defeat the patentability of the claimed invention. *See Rouffet*, 149 F.3d at 1357 (citing *Sensonics, Inc. v. Aerisonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996)).

A claimed invention is obvious in light of a proposed modification or combination only if some objective teaching in the prior art or in the knowledge generally available to one of ordinary skill in the art at the time of the invention would have led one of ordinary skill in the art, at the time of the invention, to make the proposed modification or combination. *See Huston*, 308 F.3d at 1280; *Fine*, 837 F.2d at 1074. Put another way, with respect to a proposed combination of references, the Examiner “must show reasons [why] the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.” *Rouffet*, 149 F.3d at 1357.

**C. Huang**

Please refer to Section I.C above for a discussion of *Huang*.

**D. Koski**

*Koski* discloses a display program (the CUBEVIEW program), which provides a series of three dimensional representations to a computer monitor of Demand and Supply of Resources (displayed on the z axis) at Workspaces (displayed on the y axis) in Time (displayed on the x axis) and includes a display of Resource contentions. (Column 6, Lines 9-15).

**E. Group 8 (Claims 3 and 27)**

Dependent Claims 3 and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Huang* in view of *Koski*. Appellants respectfully submit that Claims 3 and 27 are allowable over the proposed *Huang-Koski* combination.

Dependent Claim 3 of the present application recites:

The system of Claim 1, wherein the cashflow report includes a three-dimensional display comprising:

a bottom panel including a first axis specifying a plurality of products, a second axis specifying a plurality of time periods, and a plurality of bars each associated with a particular time period and a particular product, each bar having a height relating to a number of units of the associated product produced during the associated time period;

a left panel including a bar graph indicating a net cash flow for each of the products specified by the first axis in the bottom panel; and

a right panel including a bar graph indicating a net cash flow for each of the time periods specified by the second axis in the bottom panel.

Claim 27 recites substantially similar limitations.

Claim 3 is allowable, at a minimum, because it depends on independent Claim 1, which Applicants have shown to be allowable. In addition, Applicants respectfully submit that the Examiner's rejection based on the proposed combination of *Huang* with *Koski* is improper for at least two reasons. First, the required suggestion or motivation to combine *Huang* with *Koski* is lacking. Second, even if *Koski* could properly be combined with *Huang*, the proposed

combination would still fail to disclose, teach, or suggest the limitations recited in the rejected claim.

First, the rejection of Claim 3 is improper because the Examiner has not shown the required suggestion or motivation in *Huang, Koski*, or in the knowledge generally available to one of ordinary skill in the art at the time of the invention to combine these references. The mere fact that the teachings of one reference might improve the teachings of another reference, as the Examiner asserts, does not provide the required suggestion or motivation to combine. Nothing in *Huang, Koski*, or any other cited reference suggests or provides motivation for the proposed combination, and the Examiner has not provided evidence that suggests or provides the motivation for the proposed combination.<sup>5</sup> Speculation in hindsight that it would have been obvious to make the proposed combination because the proposed combination would be helpful is insufficient according to the M.P.E.P.<sup>6</sup> and governing Federal Circuit case law.<sup>7</sup>

Second, even if *Koski* could properly be combined with *Huang*, the proposed combination would still fail to disclose, teach, or suggest the limitations specifically recited in Claim 3. As just one example, Claim 3 recites that the cashflow report recited in independent Claim 1 includes a three-dimensional display comprising “a bottom panel including a first axis

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<sup>5</sup> If the Examiner is relying on “common knowledge” or “well known” art to modify the reference, or if Official Notice is being taken, Applicants have requested that the Examiner provide a reference in support of this position pursuant to M.P.E.P. § 2144.03. If the Examiner is relying on personal knowledge to supply the required motivation or suggestion to combine, Applicants have requested that the Examiner provide an affidavit supporting such facts pursuant to M.P.E.P. § 2144.03.

<sup>6</sup> See M.P.E.P. § 2145 (“The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.”).

<sup>7</sup> For example, in *In re Dembicza*k, the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that evidence of a suggestion, teaching, or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant’s invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d 994, 999 (Fed. Cir. 1999) (quoting *W.L. Gore & Assoc., Inv. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added and citations omitted). See also *In Re Jones*, 958 F.2d 347, 351 (“Conspicuously missing from this record is any evidence, other than the PTO’s speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts

specifying a plurality of products, a second axis specifying a plurality of time periods, and a plurality of bars each associated with a particular time period and a particular product, each bar having a height relating to a number of units of the associated product produced during the associated time period;” “a left panel including a bar graph indicating a net cash flow of the products specified by the first axis in the bottom panel;” and “a right panel including a bar graph indicating a net cash flow for each of the time periods specified by the second axis in the bottom panel.” As discussed above, *Koski* merely discloses a display program that provides a series of three dimensional representations to a computer monitor of Demand and Supply of Resources (displayed on the z axis) at Workspaces (displayed on the y axis) in Time (displayed on the x axis) and includes a display of Resource contentions. As further discussed above, *Huang* merely discloses computing and displaying sales history on a per product/product group or customer/customer group basis or on different levels of aggregation (i.e. this year vs. last year, actual sales v. budget, and year-to-date vs. balance of year). (Column 20, Lines 15-17 and 21-24). Neither *Huang* nor *Koski* even so much as alludes to “net cash flow.” At a minimum, nothing in the proposed *Huang-Koski* combination discloses, teaches, or suggests “a left panel including a bar graph indicating a net cash flow for each of the products specified by the first axis in the bottom panel” or “right panel including a bar graph indicating a net cash flow for each of the time periods specified by the second axis in the bottom panel,” as recited in Claim 3. Thus, the proposed *Huang-Koski* combination fails to disclose, teach, or suggest the limitations of Claim 3.

For at least these reasons, the proposed *Huang-Koski* combination fails to disclose, teach, or suggest all elements of Claims 3 and 27. Claims 3 and 27 are therefore allowable over the proposed *Huang-Koski* combination.

**III. Claims 5, 11, 19, 29, 35, and 42 are Allowable Over the Proposed *Huang-Kennedy* Combination**

**A. Overview**

Claims 5, 11, 19, 29, 35, and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Huang* in view of *Kennedy*. A copy of *Kennedy* is provided in Appendix D. Appellants respectfully submit that, even assuming for the sake of argument that *Kennedy* could be properly combined with *Huang*, the proposed *Huang-Kennedy* combination does not disclose, teach, or suggest limitations recited in these claims.

**B. Standard**

Please refer to Section II.B, above, for a discussion of the standard applicable to the Examiner's rejection of Claims 5, 11, 19, 29, 35, and 42.

**C. Huang**

Please refer to Section I.C, above, for a discussion of *Huang*.

**D. Kennedy**

*Kennedy* discloses a report generation system. (Column 3, Lines 49-50). According to *Kennedy*, a report instance includes a layout instance. (Column 4, Lines 16-18). There can be a number of different layouts, such as bar charts (histograms with side-by-side, stacked, and overlapping bars), pie charts, line charts, and Gantt charts. (Column 10, Lines 24-26).

**E. Group 9 (Claims 5 and 29)**

Dependent Claims 5 and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Huang* in view of *Kennedy*. Appellants respectfully submit that Claims 5 and 29 are allowable over the proposed *Huang-Kennedy* combination.

Claims 5 and 29 are allowable, at a minimum, because they depend on independent Claims 1 and 25, respectively, which Applicants have shown above to be allowable. In addition, Applicants respectfully submit that the rejection of Claims 5 and 29 is improper because the

Examiner has not shown the required suggestion or motivation in *Huang, Kennedy*, or the knowledge generally available to one of ordinary skill in the art at the time of the invention to combine these references with each other. Applicants reiterate the standard, discussed above, for demonstrating the required suggestion or motivation to combine references. For example, Applicants respectfully note that *Huang* contains no mention whatsoever of a “visual display comprising a product mix report that includes a pie chart,” as recited in Claims 5 and 29.

For at least these reasons, the proposed *Huang-Kennedy* combination fails to disclose, teach, or suggest all elements of Claims 5 and 29. Claims 5 and 29 are therefore allowable over the proposed *Huang-Kennedy* combination.

**F. Group 10 (Claims 11 and 35)**

Dependent Claims 11 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Huang* in view of *Kennedy*. Appellants respectfully submit that Claims 11 and 35 are allowable over the proposed *Huang-Kennedy* combination.

Claims 11 and 35 are allowable, at a minimum, because they depend on independent Claims 8 and 32, respectively, which Applicants have shown above to be allowable. In addition, Applicants respectfully submit that the rejection of Claims 11 and 35 is improper because the Examiner has not shown the required suggestion or motivation in *Huang, Kennedy*, or the knowledge generally available to one of ordinary skill in the art at the time of the invention to combine these references with each other. Applicants reiterate the standard, discussed above, for demonstrating the required suggestion or motivation to combine references. For example, Applicants respectfully note that *Huang* contains no mention whatsoever of a “visual display comprising a product mix report that includes a pie chart,” as recited in Claims 11 and 35.

For at least these reasons, the proposed *Huang-Kennedy* combination fails to disclose, teach, or suggest all elements of Claims 11 and 35. Claims 11 and 35 are therefore allowable over the proposed *Huang-Kennedy* combination.

G. Group 11 (Claims 19 and 42)

Dependent Claims 19 and 42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Huang* in view of *Kennedy*. Appellants respectfully submit that Claims 19 and 42 are allowable over the proposed *Huang-Kennedy* combination.

Claims 19 and 42 are allowable, at a minimum, because they depend on independent Claims 14 and 38, respectively, which Applicants have shown above to be allowable. In addition, Applicants respectfully submit that the rejection of Claims 19 and 42 is improper because the Examiner has not shown the required suggestion or motivation in *Huang*, *Kennedy*, or the knowledge generally available to one of ordinary skill in the art at the time of the invention to combine these references with each other. Applicants reiterate the standard, discussed above, for demonstrating the required suggestion or motivation to combine references. For example, Applicants respectfully note that *Huang* contains no mention whatsoever of a “visual display comprising a product mix report that includes a pie chart,” as recited in Claims 19 and 42.

For at least these reasons, the proposed *Huang-Kennedy* combination fails to disclose, teach, or suggest all elements of Claims 19 and 42. Claims 19 and 42 are therefore allowable over the proposed *Huang-Kennedy* combination.

**Conclusion**

Appellants have demonstrated that the present invention, as claimed, is clearly distinguishable over the prior art cited by the Examiner. Therefore, Appellants respectfully request the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to issue a notice of allowance of all claims.

Appellants have enclosed a check in the amount of \$320.00 for this Appeal Brief and a check in the amount of \$410.00 for a two-month extension of time. Appellants believe no additional fees are due. However, the Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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Appendix A

1. A system operable on at least one computer for displaying planning information associated with a supply chain, comprising:

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues and expenses occur.

2. The system of Claim 1, wherein the cashflow report includes a two-dimensional display comprising:

a first panel presenting a list of the products;

a second panel presenting the net present value for each listed product; and

a third panel presenting a plurality of columns, each column corresponding to a specified time period and providing a net cashflow associated with each listed product during that time period.

3. The system of Claim 1, wherein the cashflow report includes a three-dimensional display comprising:

a bottom panel including a first axis specifying a plurality of products, a second axis specifying a plurality of time periods, and a plurality of bars each associated with a particular time period and a particular product, each bar having a height relating to a number of units of the associated product produced during the associated time period;

a left panel including a bar graph indicating a net cash flow for each of the products specified by the first axis in the bottom panel; and

a right panel including a bar graph indicating a net cash flow for each of the time periods specified by the second axis in the bottom panel.

4. The system of Claim 1, wherein the presentation interface is further operable to generate a second visual display comprising a product report, the product report comprising:

a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;

a second bar graph indicating a profit margin per unit for each of the products; and

a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

5. The system of Claim 1, wherein the presentation interface is further operable to generate a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

6. The system of Claim 1, wherein the presentation interface is further operable to generate a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.

7. The system of Claim 1, wherein the presentation interface is further operable to generate a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

8. A system operable on at least one computer for displaying planning information associated with a supply chain, comprising:

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use.

9. The system of Claim 8, wherein the profit margin report includes a graph comprising:

a first axis scaled in terms of profit margins per unit;

a second axis scaled in terms of numbers of units produced for each time interval the specified resource is in use; and

a plurality of nodes representing the products associated with the specified resource, each node located at a position in the graph corresponding to the values for the product on the first and second axes.

10. The system of Claim 8, wherein the presentation interface is further operable to generate a second visual display comprising a product report, the product report comprising:

a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;

a second bar graph indicating a profit margin per unit for each of the products; and

a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

11. The system of Claim 8, wherein the presentation interface is further operable to generate a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

12. The system of Claim 8, wherein the presentation interface is further operable to generate a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.

13. The system of Claim 8, wherein the presentation interface is further operable to generate a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

14. A system operable on at least one computer for displaying planning information associated with a supply chain, comprising:

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a report that indicates, for one or more products in the supply chain, a forecasted demand and a number of units allocated for production;

the report including a bar graph comprising:

a first axis scaled in terms of numbers of units;

a bar, associated with a product in the supply chain, extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand; and

a marker on the bar corresponding to a second position on the first axis, the second position indicating a number of units of the product allocated for production.

16. The system of Claim 14, wherein the report indicates, for one or more products associated with a specified resource, a forecasted demand and a number of units allocated for production.

17. The system of Claim 16, wherein the report includes a bar graph comprising:

a first axis scaled in terms of profit margins for each time interval the specified resource is used;

a second axis scaled in terms of number of units;

a bar, associated with a product associated with the specified resource, extending from a first position on the first axis to a height corresponding to a second position on the second axis, the first position indicating a profit margin for each time interval the specified resource is in use with respect to the product associated with the bar, the second position indicating a number of units of the product associated with the bar that could be sold according to customer demand; and

a marker on the bar corresponding to a third position on the second axis, the third position indicating a number of units of the product associated with the bar allocated for production.

18. The system of Claim 14, wherein the presentation interface is further operable to generate a second visual display comprising a product report, the product report comprising:

a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;

a second bar graph indicating a profit margin per unit for each of the products; and

a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

19. The system of Claim 14, wherein the presentation interface is further operable to generate a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

20. The system of Claim 14, wherein the presentation interface is further operable to generate a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.

21. The system of Claim 14, wherein the presentation interface is further operable to generate a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

22. A system operating on at least one computer for displaying planning information associated with a supply chain, comprising:

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a plant distribution report that includes a bottom panel comprising:

a first axis specifying a plurality of locations;

a second axis specifying profit margins per hour; and

a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource.

23. The system of Claim 22, wherein the plant distribution report further comprises a side panel displaying bars corresponding to the locations specified by the first axis in the bottom panel, each bar providing information relating to a selected parameter.

24. The system of Claim 22, wherein the plant distribution report further comprises a side panel displaying planning information relating to a selected location from the first axis in the bottom panel.

25. A method operable on at least one computer for displaying planning information associated with a supply chain, comprising:

at a planning engine, accessing an enterprise model representing a supply chain that involves a plurality of products and resources;

at the planning engine, using the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

at a presentation interface, generating a first visual display for selected planning information, the first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues and expenses occur.

26. The method of Claim 25, wherein the cashflow report includes a two-dimensional display comprising:

a first panel presenting a list of the products;

a second panel presenting the net present value for each listed product; and

a third panel presenting a plurality of columns, each column corresponding to a specified time period and providing a net cashflow associated with each listed product during that time period.

27. The method of Claim 25, wherein the cashflow report includes a three-dimensional display comprising:

a bottom panel including a first axis specifying a plurality of products, a second axis specifying a plurality of time periods, and a plurality of bars each associated with a particular time period and a particular product, each bar having a height relating to a number of units of the associated product produced during the associated time period;

a left panel including a bar graph indicating a net cash flow for each of the products specified by the first axis in the bottom panel; and

a right panel including a bar graph indicating a net cash flow for each of the time periods specified by the second axis in the bottom panel.

28. The method of Claim 25, further comprising, at the presentation interface, generating a second visual display comprising a product report, the product report comprising:  
a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;  
a second bar graph indicating a profit margin per unit for each of the products; and  
a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

29. The method of Claim 25, further comprising, at the presentation interface, generating a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

30. The method of Claim 25, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.

31. The method of Claim 25, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

32. A method operable on at least one computer for displaying planning information associated with a supply chain, comprising:

at a planning engine, accessing an enterprise model representing a supply chain that involves a plurality of products and resources;

at the planning engine, using the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

at a presentation interface, generating a first visual display for selected planning information, the first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use.

33. The method of Claim 32, wherein the profit margin report includes a graph comprising:

a first axis scaled in terms of profit margins per unit;

a second axis scaled in terms of numbers of units produced for each time interval the specified resource is in use; and

a plurality of nodes representing the products associated with the specified resource, each node located at a position in the graph corresponding to the values for the product on the first and second axes.

34. The method of Claim 32, further comprising, at the presentation interface, generating a second visual display comprising a product report, the product report comprising:

a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;

a second bar graph indicating a profit margin per unit for each of the products; and

a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

35. The method of Claim 32, further comprising, at the presentation interface, generating a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

36. The method of Claim 32, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.

37. The method of Claim 32, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

38. A method operable on at least one computer for displaying planning information associated with a supply chain, comprising:

at a planning engine, accessing an enterprise model representing a supply chain that involves a plurality of products and resources;

at the planning engine, using the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

at a presentation interface, generating a first visual display for selected planning information, the first visual display comprising a report that indicates, for one or more products in the supply chain, a forecasted demand and a number of units allocated for production;

the report including a bar graph comprising:

a first axis scaled in terms of numbers of units;

a bar, associated with a product in the supply chain, extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand; and

a marker on the bar corresponding to a second position on the first axis, the second position indicating a number of units of the product allocated for production.

39. The method of Claim 38, wherein the report indicates, for one or more products associated with a specified resource, a forecasted demand and a number of units allocated for production.

40. The method of Claim 38, wherein the report includes a bar graph comprising:

a first axis scaled in terms of profit margins for each time interval the specified resource is used;

a second axis scaled in terms of number of units;

a bar, associated with a product associated with the specified resource, extending from a first position on the first axis to a height corresponding to a second position on the second axis, the first position indicating a profit margin for each time interval the specified resource is in use with respect to the product associated with the bar, the second position indicating a number of units of the product associated with the bar that could be sold according to customer demand; and

a marker on the bar corresponding to a third position on the second axis, the third position indicating a number of units of the product associated with the bar allocated for production.

41. The method of Claim 38, further comprising, at the presentation interface, generating a second visual display comprising a product report, the product report comprising:

a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;

a second bar graph indicating a profit margin per unit for each of the products; and

a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

42. The method of Claim 38, further comprising, at the presentation interface, generating a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

43. The method of Claim 38, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.

44. The method of Claim 38, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

45. A method operating on at least one computer for displaying planning information associated with a supply chain, comprising:

at a planning engine, accessing an enterprise model representing a supply chain that involves a plurality of products and resources;

at the planning engine, using the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

at a presentation interface, generating a first visual display for selected planning information, the first visual display comprising a plant distribution report that includes a bottom panel comprising:

a first axis specifying a plurality of locations;

a second axis specifying profit margins per hour; and

a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource.

46. The method of Claim 45, wherein the plant distribution report further comprises a side panel displaying bars corresponding to the locations specified by the first axis in the bottom panel, each bar providing information relating to a selected parameter.

47. The method of Claim 45, wherein the plant distribution report further comprises a side panel displaying planning information relating to a selected location from the first axis in the bottom panel.